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ABSTRACT

This paper presents a study conducted with two goals in mind: (1) to employ an operational definition of school choice that is more faithful to orthodox choice theory than are extant definitions; and (2) with this definition, to assess possible effects of school choice on students' academic commitment and achievement. Claims for the positive effects of school choice on student achievement deserve serious scrutiny because of increasingly widespread support for school-choice initiatives. Proponents for school choice believe that choice results in a better match between the student and the school, which, in turn, should result in greater academic commitment and academic achievement. To date, however, the research regarding the results of school choice is inconclusive. The definition of school choice captures these three elements: (1) school choice involves a public-school student selecting another public school; (2) school choice requires active selection from among perceived alternatives; and (3) school choice effects will be greater when the chosen school presents itself as a magnet school or "school of choice." The paper details the methodology of the study, including data sources, dependent and independent variables, and outcomes. The results indicate that school choice had no effect on students' subsequent academic commitment or academic achievement. Contains 23 references. (RJM)

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ED 429 370

Effects of school choice on academic commitment and academic achievement: Evidence from NELS:88

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Paper presented at the 1996 meeting of the American Educational Research Association, New York

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"There is an intensity,
even a zealousness,
in the debate on school choice
that smothers thoughtful discourse."
(Boyer, 1992, p. xv)

Claims of the positive effects of school choice on student achievement deserve serious empirical scrutiny because of increasingly widespread public and political support for school choice initiatives (Center for Education Reform, 1996; Elam, Rose & Gallup, 1993; Heritage Foundation, 1993). Proponents of school choice believe that choice results in a better match between the student and the school, which, in turn, should result in greater academic commitment and academic achievement (Chubb & Moe, 1990; Coleman & Hoffer, 1987; Doyle, 1989; Driscoll, 1993; Levin, 1991; Nathan, 1987; Raywid, 1987). To date, however, the research regarding the results of school choice is far from conclusive (Cookson, 1994) and, in any case, is fraught with methodological complications.

The Rand Corporation's oft-cited Alum Rock study, for example, uncovered no significant differences in academic achievement between voucher students and those who were assigned schools (Capell, 1981). Selection bias, however, proved to be a serious threat to the internal validity of this study.

A number of researchers have employed large databases, principally High School and Beyond (HSB) and the National Education Longitudinal Study of 1988 (NELS:88), to examine the effects of school choice (e.g., Alexander & Pallas, 1985; Chubb & Moe, 1989; Coleman, Hoffer, & Kilgore, 1982; Jencks, 1985). But results from these studies are difficult to interpret unequivocally

because of the comparison of poorly matched public and private schools, the examination of school effects over too limited a time period, or the limitations due to the items available for constructing a school-choice variable.

The present study

We had two goals in conducting our study: (a) to employ an operational definition of school choice that, we believe, is more faithful to orthodox choice theory than are extant definitions; and (b) with this definition, to assess possible effects of school choice on students' academic commitment and achievement. Regarding the former, we believe that a definition of school choice should capture the three elements below.

1. *School choice involves a public school student selecting another public school.* Because public- and private-school students are fundamentally nonequivalent (as are certain aspects of the schools they attend), the most appropriate test of the school choice argument should be restricted to choice and nonchoice students attending a public school.

2. *School choice requires an active selection from among perceived alternatives.* In a free market, the individual's deliberate selection among alternatives in order to achieve a desired educational goal will enhance the individual's commitment to and fulfillment of that goal (Seeley, 1984). Therefore, choice students are those who report active consideration of more than one school.

3. *School choice effects will be greater when the chosen school presents itself as a magnet school or "school of choice."* Magnet schools and

schools of choice can specialize their missions around particular student goals in order to create attractive alternatives to traditional comprehensive institutions (Friedman, 1962). These themes may include art, science, music, multi-culturalism and so forth (Levin, 1991; Shujaa, 1992). Such schools arguably create conditions facilitative of student commitment and achievement.

Method

Data Source

We employed the NELS:88 database. NELS:88 data were collected by the National Opinion Research Center under contract with the National Center for Education Statistics (NCES, 1990, 1992, 1994). NCES employed a two-stage sampling procedure: They first selected a probability sample of 1,052 schools in 1988 and, from each school, then selected approximately 26 eighth-grade students for base year data collection. A subsample of these students was surveyed again in the 10th and 12th grades. We imposed several criteria on sample selection for our analysis: We included those students who (a) participated in all three waves of NELS:88 data collection, (b) attended a public high school, and (c) attended the same school for their entire secondary experience.[1]

Variables

Here, we briefly describe our dependent and independent variables. More specific information on these variables and the items they comprise appears in the appendix.

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[1] That is, F2PNLFLG = 1, G12CTRL1 = 1, and F2S103 = 1, respectively.

Dependent variables. We looked at two hypothesized student outcomes of school choice: Academic commitment and academic achievement. We constructed an academic commitment composite, which we called EFFORT,[2] from math- and science-related items in regard to paying attention in class, participating in class, turning work in on time, and completing more work than assigned (α = .78). As for academic achievement, we factor analyzed the four NELS:88 achievement tests administered in the senior year: reading, mathematics, science, and history. We formed an achievement composite (ACHIEVE92) based on the factor scores derived from the first principal component.

Independent variables. Our primary independent variable was school choice. We constructed a dummy variable, CHOICE, as follows (Figure 1). We treated students as not exercising choice if (a) they indicated, as eighth graders, that they expected to attend a public high school in grade 10; (b) they, as eighth graders, were not considering another high school; and (c) they ultimately did not attend a public magnet school or a public school of choice.[3] In contrast, we designated students as exercising choice if (a) they indicated, as eighth graders, that they expected to attend a public high school in grade 10; (b) they, as eighth graders, were considering another high school; and (c) they ultimately attended a public magnet school or a public school of choice (Coleman, Schiller & Schneider, 1994).[4] Finally, to maximize the duration of the choice/nonchoice

[2] Unless otherwise noted, variable names reflect our language and not language found in NELS:88 documents.
[3] That is, If BYS14=1 and BYS15=1 and F2SC4B=2 and F2SC4C=2 then CHOICE=0.
[4] If BYS14=1 and BYS15=2 and BYS16=1 and F2SC4B=1 or F2SC4C=1 then CHOICE=1.

experience, we imposed the additional constraint that the student attend the same public high school for all four years.[5]

Two additional independent variables were included as statistical controls: Socioeconomic status (SES) and eighth-grade academic achievement (ACHIEVE88). We simply used the NELS:88 composite for the former, which comprised information regarding father's education, mother's education, father's occupation, mother's occupation, and family income. ACHIEVE88 was constructed in a fashion parallel to ACHIEVE92.

Analyses

To examine the possible effects of CHOICE on both EFFORT and ACHIEVE92, we regressed each dependent variable on CHOICE, SES, and ACHIEVE88. For the ACHIEVE92 equation, we also inserted EFFORT as a control variable.

To adjust for (a) oversampling of certain demographic groups and (b) two-stage cluster sampling, we created a new sampling weight for each student that was equal to the student's NELS:88 sampling weight (F2PNLWT) divided by the mean weight. This had the effect of preserving the original sample size while correcting for the disproportionate sampling of Hispanics and Asian Americans. Further, we adopted the more conservative alpha of .001 (versus .05) to minimize the possible Type I errors that NELS:88 cluster sampling invites.

Results and Discussion

Employing our definition of choice, we found that roughly 14% of students in our sample exercised choice in the selection of high schools: 1,249 of the

[5] G12CTRL=1 and F2S103=1.

8,827 students who met our inclusion criteria. In comparing this finding to results from other studies, one must bear in mind that we imposed more rigorous constraints on our school-choice variable in order to identify as confidently as we could students who had indeed chosen to attend their high school.

Turning to the primary question at hand, even with this more sensitive definition in use, we found that CHOICE had no effect on either outcome variable: The partial regression coefficient associated with CHOICE was statistically nonsignificant for both EFFORT and ACHIEVE92 (βs = -.02 and .00, respectively; see Table 3). That is, whether a student exercised choice would appear to have no influence on their subsequent academic commitment or academic achievement.

Driscoll (1993) aptly points out that school choice may result more in changed hearts than in changed minds. Perhaps future research should consider possible *affective* consequences of choice, rather than the behavioral or achievement consequences we examined in the present study. But it also is possible that the effect of choice on our outcome variables interacts with student characteristics, such as ethnicity. Subsequent research should explore this consideration, as well. Finally, we encourage other school-choice researchers to revisit their operational definitions of school choice and the implications for subsequent research in this area.

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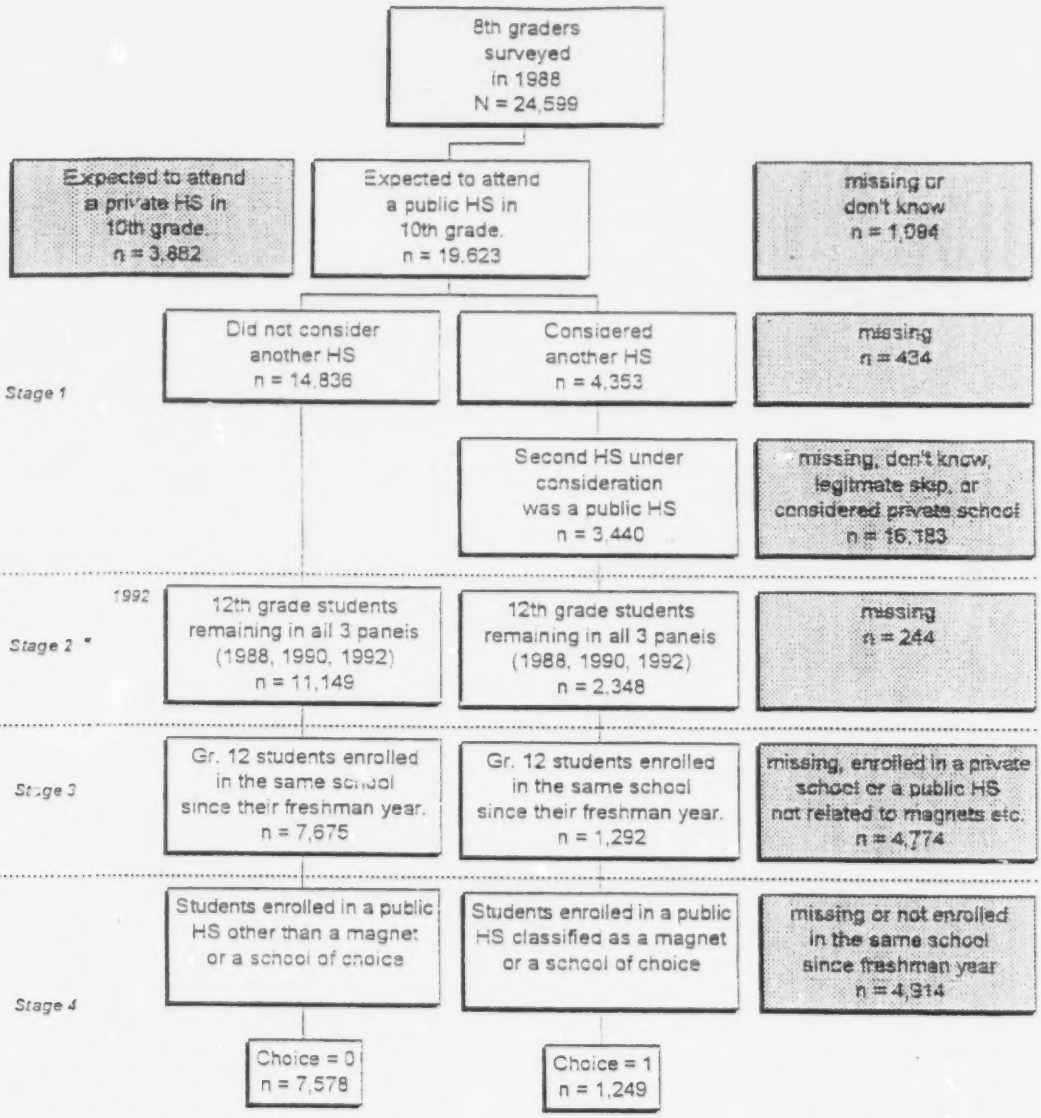
8th graders surveyed in 1988 N = 24,599
Expected to attend a private HS in 10th grade. n = 3,882
Expected to attend a public HS in 10th grade. n = 19,623
missing or don't know n = 1,094
Stage 1
Did not consider another HS n = 14,836
Considered another HS n = 4,353
missing n = 434
Second HS under consideration was a public HS n = 3,440
missing, don't know, legitimate skip, or considered private school n = 16,183
1992
Stage 2 *
12th grade students remaining in all 3 panels (1988, 1990, 1992) n = 11,149
12th grade students remaining in all 3 panels (1988, 1990, 1992) n = 2,348
missing n = 244
Stage 3
Gr. 12 students enrolled in the same school since their freshman year. n = 7,675
Gr. 12 students enrolled in the same school since their freshman year. n = 1,292
missing, enrolled in a private school or a public HS not related to magnets etc. n = 4,774
Stage 4
Students enrolled in a public HS other than a magnet or a school of choice
Students enrolled in a public HS classified as a magnet or a school of choice
missing or not enrolled in the same school since freshman year n = 4,914
Choice = 0 n = 7,578
Choice = 1 n = 1,249

Figure 1. School choice sample selection.

* Of the 1988 base-year sample, 13,741 students were included in all three NELS:88 panels. Beginning with the second follow-up in 1992, consequently, row totals equal 13,741 and not 24,599.

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Appendix

Below we describe the items and composites in our analyses. The NELS:88 variable names appear in brackets whereas our variable names appear in parentheses. The NELS:88 prefixes "BY" and "F2" refer to the base-year (NCES, 1990) and the second follow-up (NCES, 1994) respectively.

Independent Variables

School choice (CHOICE): [BYS14, BYS16]: Sector of high school the student expects to attend in tenth grade (1 = public, 2 = private religious, 3 = private non-religious, 4 = don't know). [BYS15]: Another high school the student may attend instead (1 = no, 2 = yes). [F2PNLFLG]: Indicates if member is a member of the base year, first follow-up and second follow-up panels (0 = not, 1 = member). [F2S103]: The number of times the student changed schools since 1-1-88 (1 = none, 2 = one time, 3 = two times, 4 = three or more times). [G12CTRL1]: School classification reported by the school's principal (1 = public, 2 = Catholic, 3 = private / other religious, 4 = private / non-religious, 5 = private / not ascertained). [F2C4B]: Public magnet school (1 = yes, 2 = no). [F2C4C]: Public school of choice (1 = yes, 2 = no).

Dependent Variables

12th grade academic achievement (ACHIEVE92): [F22XRSTD, F22XMSTD, F22XSSTD, F22XHSTD]: NELS:88 standardized composite of performance in reading, mathematics, science and history (senior year) based on factor scores from the first principal component.

Effort (EFFORT): [F2S17A, F2S17B, F2S17C, F2S17D, F2S21A, F2S21B, F2S21C, F2S21D]: A composite comprising of items, from the 1992 student survey, about science and math class that measure how often the student; pays attention in class, does work on time, does more work than needed, and participates actively in class
(1 = never, 2 = rarely, 3 = sometimes, 4 = often, 5 = always).

Other Variables

Weight (NEWEIGHT) [F2PNLWT]: Used for producing weighted student panel statistics when all three survey waves data are included in the analysis. In order to adjust for the deliberate oversampling of certain demographic groups by NCES, a sampling weight was formed by dividing the student's 1992 panel weight, F2PNLWT, by the sample's mean weight. This preserved the original sample size while correcting for the disproportionate sampling of Hispanics and Asian Americans.

Socioeconomic status (SES) [F2SES1]: Continuous variable indicting student's socioeconomic status. Constructed from parent questionnaire. Included are; father's and mother's education levels, father's and mother's occupations, and family income.

8th grade academic achievement (ACHIEVE88): [BY2XRSTD, BY2XMSTD, BY2XSSTD, BY2XHSTD]: NELS:88 standardized composite of performance in reading, mathematics, science and history (eighth grade year) based on factor scores from the first principal component.

Table 1
Description of sample in percentages

N = 8,827	Non-choice = 0 *n* = 7,578	Choice = 1 *n* = 1,249
SEX		
males	47.9	46.0
females	52.1	54.0
RACE		
White	77.2	62.1
Asian	5.8	9.0
Hispanic	9.1	11.8
Black	7.1	16.1
American Indian	.8	1.0
SCHOOL REGION		
Northeast	19.1	15.4
Midwest	31.7	22.3
South	30.9	36.8
West	17.4	25.5
URBANICITY		
Urban	15.8	34.1
Suburban	44.2	38.3
Rural	40.0	27.6

Table 2
Means, Standard Deviations, and Intercorrelations

Variables		(1)	(2)	(3)	(4)	(5)
(1)	ACHIEVE92					
(2)	ACHIEVE88	.85				
(3)	SES	.43	.41			
(4)	EFFORT	-.04	-.07	-.04		
(5)	CHOICE	-.03	-.04	-.00	-.02	
	M	.15	.14	.09	28.83	.16
	SD	.92	.94	.75	4.97	.37

Table 3
Regression Results: Academic Achievement

	Dependent Variables	
	Model 1 EFFORT	Model 2 ACHIEVE92
Independent Variables		
ACHIEVE88	-.06*	.81*
SES	-.02	.09*
EFFORT		.02
CHOICE	-.02	.00
R^2	.01	.72

Note. Standardized partial regression coefficients are reported (N = 5,386).
* $p < .001$